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## **Markman Brief Part One**

**IN THE UNITED STATES DISTRICT COURT  
FOR THE SOUTHERN DISTRICT OF OHIO**

## Western Division

THE PROCTER & GAMBLE COMPANY,

Plaintiff,

V.

THE COCA-COLA COMPANY,

Defendant.

CIVIL ACTION NO. C-1-02-393

Hon. Walter Herbert Rice (Chief Judge)

Hon. Sharon L. Ovington (Magistrate)

**THE COCA-COLA COMPANY'S BRIEF ON THE  
MEANING OF DISPUTED CLAIM TERMS IN P&G'S PATENT**

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## I. INTRODUCTION

The Coca-Cola Company (“Coca-Cola”) respectfully requests that this Court construe the claims at issue in The Procter & Gamble (“P&G”) Company’s U.S. Patent No. 4,722,847 (“the ‘847 patent”) consistent with the express language of the claims, the only embodiments disclosed and enabled in the patent specification, and the representations made by P&G’s attorneys and employees during patent prosecution. A copy of the ‘847 patent is attached as Exhibit 1.

Properly construed, P&G’s ‘847 patent claims cover a calcium-supplemented fruit juice beverage which comprises, *inter alia*, a specified amount of an “acid component” comprising (1) the acids naturally present in the base juice and (2) a “mixture” of citric acid and malic acid discretely added to the base juice in a defined ratio. The ‘847 patent specification and its prosecution history repeatedly make clear that P&G’s claimed beverage relies upon the presence of such added acids to solubilize calcium and impart desirable taste qualities. Every disclosed embodiment of the claimed beverage composition contains a mixture of added acids that has been combined with the natural juice acids.

In the preferred (and, Coca-Cola submits, the only workable) embodiment, the beverage consisted of calcium first solubilized (*i.e.*, dissolved) in a mixture of citric acid and malic acid to form a “premix” that was subsequently combined with the base juice. The only other beverage composition suggested by the ‘847 patent contained citric acid and malic acid that were directly added to the base juice along with the added calcium. Under either approach, however, the resulting fruit juice beverage contained added acids that were not found in the original base juice. Indeed, reliance upon the natural acids in the base juice alone to solubilize directly added calcium was disparaged and expressly disclaimed by P&G. Under such a construction, the claims would not encompass a beverage with an acid component consisting only of the natural

acids present in the base juice to which calcium has been directly added, as is the case with the accused Coca-Cola products.

P&G's current interpretation of its claims, on the other hand, is entirely result-oriented. It is concerned not with what the intrinsic and corroborating extrinsic evidence actually reveals about the proper legal scope of the claimed invention, but with advocating a litigation-induced construction in 2004 that is designed to read on Coca-Cola's products marketed since 1986. Indeed, P&G's more than fifteen-year delay in bringing suit clearly suggests that it recognized that its position is a weak one.

P&G's interpretation blithely ignores the ordinary and customary meaning of the words used in the '847 patent claims, seeks to disregard the teaching of its own patent specification, and pretends as if it had not consistently maintained since 1986 that its claimed solution for a calcium supplemented beverage requires an acid component that includes added acids for calcium solubilization mixed with the base juice. To do this, P&G seeks to read the word "mixture" out of its own claims to broaden them to cover a calcium-supplemented beverage that has an "acid component" of only naturally occurring citric and malic acids:

'847 claim phrase	P&G's de facto interpretation
b. from about 0.4 to about 4% by weight of an acid component comprising a mixture of citric acid and malic acid . . .	b. from about 0.4 to about 4% by weight of an acid component comprising citric acid and malic acid . . .

Any such interpretation that ignores any word in a claim is, as a matter of law, legally unsupportable. Here, it is particularly unsupportable when an "acid component" that includes added citric and malic acids for calcium solubilization is described in the '847 patent as the "key

component in the fruit juice beverages and juice concentrates of the present invention . . . .”

Exh. 1 at col. 5, lns. 56-57.

## II. BACKGROUND OF THE DISPUTE

The ‘847 patent arose out of research work at P&G to develop a calcium-supplemented fruit juice beverage as an alternative to milk. According to the ‘847 patent, to make such a beverage alternative was not a matter of simply adding calcium to a fruit juice (*e.g.*, orange juice). P&G found that the direct addition of calcium to orange juice alone created several problems. For example, one problem was calcium solubility. That is, the calcium would not fully dissolve in the juice, but precipitate out as a residue on the bottom of the juice container. Exh. 1 at col. 2, lns. 10-25. Moreover, the degree of calcium solubility was believed to affect the amount of calcium that could be absorbed in the bloodstream. *Id.* at col. 2, lns. 26-37. Another problem with adding calcium directly to orange juice alone was the creation of undesirable beverage tastes and smells. *Id.* at col. 1, ln. 67, through col. 2, ln. 1.

According to the ‘847 patent, an “acid component” comprising a mixture of acids was the “key component” for achieving satisfactory calcium solubility and desirable taste properties. *Id.* at col. 5, lns. 56-61. Instead of merely adding calcium directly to orange juice alone, P&G devised a scheme to solubilize the calcium in a mixture of added acids and then add the resulting premix solution of solubilized calcium to the fruit juice. *Id.* at col. 4, lns. 5-19. The inventor also suggested the possibility that “the acids and calcium carbonate can be directly added to” the juice, *id.* at col. 11, lns. 11-13 (emphasis added), although the direct addition of calcium carbonate with the added acids was said to create a host of problems, including inadequate solubilization, loss of volatile flavor, cooked brown-off flavors, and residual carbonation. *Id.* at col. 11, lns. 9-26. For this reason, use of the premix solution of solubilized calcium was

“preferred.” *Id.* at col. 11, lns. 27-28. Under either approach, however, the claimed beverage composition contains added acids.

In pursuing the ‘847 patent before the U.S. Patent and Trademark Office (“PTO”), P&G repeatedly argued the superiority of its invention over the direct addition of calcium to orange juice alone. A number of undesirable juice beverages were made for the examiner with the direct addition of calcium and contrasted with the juice beverage made with the use of P&G’s premix addition of calcium solubilized in an acid mixture. P&G asserted to the examiner that its claimed beverage solved the problems experienced by prior direct calcium addition approaches. Exh. 8 at 5. As a result of P&G’s demonstrations and representations, at the end of the face-to-face interview the examiner concluded that P&G’s “[p]re-mix procedure appears to be preferred or only workable procedure comparing [sic: compared to] direct addition.” Exh. 5 (emphasis added). Although P&G repeatedly disparaged the direct addition approach and limited its invention to beverages made with the use of the premix addition of acids to obtain its patent, P&G now seeks to broaden its claims to cover the direct addition of calcium to juice without the addition of any acids.

Unknown to P&G at the time it applied for the ‘847 patent, Coca-Cola had independently developed its own calcium-supplemented orange juice product. Coca-Cola had long been familiar with the use of calcium in beverages through its experiments in the 1970s and 1980s in developing low acid orange juice, calcium-fortified Tab®, and calcium-containing powdered orange juice products (Hi-C® juice). Coca-Cola experimented with different types of calcium salts and discovered that its special blend of tricalcium phosphate and calcium lactate could be directly added to orange juice alone without causing undesirable taste or solubility problems. Notably, Coca-Cola’s accused products do not require the use of any added “citric acid and malic

acid.” *See* Exh. 22 at 14-15. The PTO ultimately issued to Coca-Cola U.S. Patent No. 4,871,554 for its work. Exh. 23. In September 1986, Coca-Cola launched its calcium-supplemented orange juice product under the Minute Maid® brand. *See* Exh. 24 at 76, lns. 20-22.

P&G was aware that Coca-Cola was selling calcium-supplemented orange juice products under the Minute Maid label continuously since 1986, *see* Exh. 25 at 326-333, although it delayed filing this lawsuit until May 2002. Exh. 26. P&G both monitored and tested Coca-Cola’s products in the late 1980s and early 1990s. *See* Exh. 19 at 126; Exh. 25. P&G also unsuccessfully approached Coca-Cola several times in the 1990s in an attempt to license P&G’s CCM<sup>1</sup> technology. *See* Exh. 28 at 30-31 & 34-36. At no time, however, did P&G ever assert the construction of the ‘847 patent it advances today. Moreover, only until after the filing of the ‘847 patent and after Coca-Cola launched its own calcium-supplemented orange juice product in 1986 did the inventor of the ‘847 patent learn that it was possible to mass commercialize a calcium-fortified orange juice product without the use of added acids. Exh. 19 at 68, lns. 18-21.

The fact that Coca-Cola has used its own patented approach to calcium-fortify fruit juice beverages since 1986 and has never made P&G’s ‘847 patented formulation does not negate the utility of P&G’s patent. P&G’s CCM portfolio has been, and continues to be, through royalties generated by its exclusive licensee Tropicana, a valuable intellectual property asset for P&G. Exh. 27 at 155-59. However, there is simply no basis in law for P&G to expand the scope of its claims to cover a formulation that it did not invent, disclose, or claim in its patent and, indeed, which it implicitly or explicitly disclaimed therein.

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<sup>1</sup> CCM stands for “Calcium Citrate Malate,” which is defined by P&G to mean an additive of calcium salts mixed with citric and malic acids and/or their salts. Exh. 27 at 13-14. The ‘847 patent is part of P&G’s CCM patent portfolio.

### III. STATEMENT OF THE LAW OF CLAIM CONSTRUCTION

In *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 981 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996), the Federal Circuit reaffirmed that claim construction “is still based upon the patent and prosecution history.” Claim terms are generally given their ordinary and accustomed meaning unless the patent and the prosecution history expressly indicate that the terms were used differently by the inventor. *Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1298-99 (Fed. Cir. 2003). In *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996), the Federal Circuit characterized the specification as usually being “dispositive” and “the single best guide to the meaning of a disputed term.” The written description in the specification is significant because it “may act as a sort of dictionary, which explains the invention and may define terms used in the claims.” *Markman*, 52 F.3d at 979.

Moreover, the prosecution history is the “‘undisputed public record’ of proceedings in the Patent and Trademark Office [and] is of primary significance in understanding the claims.” *Id.* at 980. Thus, this Court has “broad power to look as a matter of law to the prosecution history of the patent in order to ascertain the true meaning of language used in the patent claims.” *Id.*

### IV. A PLAIN READING OF THE ‘847 PATENT CLAIMS REVEALS THAT THE CLAIMED BEVERAGE INCLUDES AN “ACID COMPONENT” THAT REQUIRES A “MIXTURE” OF ADDED CITRIC AND MALIC ACIDS IN ADDITION TO ANY ACIDS NATURALLY PRESENT IN THE BASE JUICE

P&G asserts that Coca-Cola infringes claims 1, 2, 3, 7, 8, and 11 of the ‘847 patent. All of these claims are directed to a fruit juice beverage. Claim 1 is reproduced in full below:

1. A calcium-supplemented single-strength fruit juice beverage, which is substantially free of added protein and which comprises:

a. from about 0.05<sup>2</sup> to about 0.26% by weight solubilized calcium;

b. from about 0.4 to about 4% by weight of an acid component comprising a mixture of citric acid and malic acid in a weight ratio of citric acid: malic acid of from about 5:95 to about 90:10;

c. at least about 45% fruit juice;

d. a sugar content from about 2° to about 16° Brix; and

e. no more than about 0.07% by weight chloride ion.

Exh. 1 at col. 13, lns. 15-27 (emphasis added).

Claims 2, 3, 7, 8, and 11 all depend from independent claim 1 and add additional limitations, whose meanings are not in dispute, that further specify the type or amount of the beverage's constituent elements. Exh. 1 at col. 13, ln. 28, to col. 14, ln. 12. The '847 patent contains one additional unasserted independent claim, claim 12, directed to a "fruit juice concentrate" that employs the identical "acid component comprising a mixture of citric acid and malic acid" language. *Id.* at col. 14, lns. 18-21 (emphasis added).

The ordinary dictionary definition of "mixture" at the time the '847 patent application was filed in 1986 requires that a mixing of ingredients take place:

*n. Chemistry, the product of two or more substances mixed together, but not chemically combined. Mixtures can be separated mechanically by distillation, freezing, melting, etc. Compare compound. [from Latin *mixtura*, from *miscere* to mix]*

Exh. 20, THE AMERICAN HERITAGE DICTIONARY OF SCIENCE 409 (1986) (emphasis added). As discussed below, this definition of "mixture" is entirely consistent with the use of that word in the patent specification and in the prosecution history.

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<sup>2</sup> The '847 patent contains a printing error of "0.06," which was corrected by a certificate of correction dated May 8, 2001. *See* Exh. 12.



While Coca-Cola submits that the reference to the specification and the prosecution history is both helpful and necessary in this case to understand the scope of the claimed “acid component” limitation, the claim on its face and viewed as a whole<sup>3</sup> clearly suggests that the claimed beverage contains a specified amount of an “acid component” comprising both the acids naturally present in the base juice and a “mixture” of acids discretely added to the base juice in the defined ratio. More specifically, it is apparent that there will be overlap between ingredients (b) and (c) of claim 1 to the extent that there is any citric or malic acid in the base fruit juice. P&G nonetheless drafted its claims such that this “acid component” limitation is a separately enumerated ingredient of the calcium-supplemented fruit beverage, just as the levels of calcium, sugar content, and chloride ion are separate overall beverage limitations, and not a further limitation on the distinct 45% fruit juice ingredient.<sup>4</sup> Such language on its face and its arrangement in the claim therefore dictates the presence in the claimed beverage of a mixture of added acids in addition to whatever acids may be inherently present in the base fruit juice.

As a result, one cannot logically read the claim as intending that the natural acids of the base juice alone will satisfy the recited “mixture of citric acid and malic acid” portion of “acid component.” To construe ingredient (b) as consisting only of the acids in the base fruit juice as P&G proposes would improperly erase the word “mixture” from the clause. *See Apple Computer, Inc. v. Articulate Sys., Inc.*, 234 F.3d 14, 25 (Fed. Cir. 2000) (holding that the claim

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<sup>3</sup> *See Hockerson-Halberstadt, Inc. v. Converse, Inc.*, 183 F.3d 1369, 1374 (Fed. Cir. 1999) (construing a claim limitation consistent with other limitations in the claim); *Credle v. Bond*, 25 F.3d 1566, 1571 (Fed. Cir. 1994) (“In determining the true meaning of the language of the count, the grammatical structure and syntax thereof may be instructive.”).

<sup>4</sup> For example, P&G could have drafted ingredient (c) to recite “at least about 45% fruit juice comprising a mixture of citric acid and malic acid in a weight ratio of citric acid: malic acid of from about 5:95 to about 90:10, said juice constituting an acid component of said beverage from about 0.4 to about 4% by weight.”



must be viewed as a whole and it was improper to read the qualifier “help” out of the claim term “help access window”). The Federal Circuit has repeatedly held that one must give meaning to all limitations in a claim and has consistently refused to adopt illogical constructions that omit claim limitations or otherwise render them redundant or superfluous.<sup>5</sup>

Any doubt on this issue is removed when one considers the definition and disclosure of “acid component” in the patent specification. As discussed in greater detail below, to construe “acid component” as solely encompassing the naturally occurring acids in the base juice not only reads the word “mixture” out of the claim, but also goes against the teachings of the patent specification and conflicts with representations P&G made during patent prosecution to distinguish the prior art.

**V. THE ‘847 PATENT SPECIFICATION TEACHES THAT THE CLAIMED BEVERAGE REQUIRES ADDED ACIDS TO SOLUBILIZE THE CALCIUM AND TO PROVIDE DESIRABLE TASTE PROPERTIES**

**A. The ‘847 Patent Specification Teaches that the Key Component Is the “Acid Component” Comprising a “Mixture” of Added Acids**

While the complete phrase “acid component comprising a mixture of citric acid and malic acid” is not expressly defined in full in the ‘847 patent specification, the term “acid component” is discussed. “Acid component” is functionally defined as “[a] key component in the fruit juice beverages and juice concentrates of the present invention from the standpoint of solubilizing the calcium and providing desirable taste properties.” Exh. 1 at col. 5, lns. 56-59 (emphasis added). Moreover, this “acid component” element “comprises” a “mixture” of citric acid and malic acid, and preferably “consists essentially of a mixture of citric and malic acids,”

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<sup>5</sup> See, e.g., *Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1331-33 (Fed. Cir. 2000); *Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp.*, 93 F.3d 1572, 1579 (Fed. Cir. 1996); *Texas Instruments, Inc. v. U.S. Int’l Trade Comm’n*, 988 F.2d 1165, 1171 (Fed. Cir. 1993).

although other edible acids, such as phosphoric acid and fumaric acid, “can also be included in the fruit juice beverage.” *Id.* at col. 5, lns. 59-68.

The specification makes clear that the claimed acid component’s “mixture of citric acid and malic acid” is something different from and, indeed, added to the natural acids found in the base juice:

Referring to the FIGURE, an acid component comprising citric acid and malic acid (Acids) is typically dissolved in the appropriate quantity of water . . . .

Once the solution containing the dissolved acids is formed, a source of calcium is added . . . .

\* \* \*

The premix solution containing the solubilized calcium is combined in a mix tank with chilled (e.g., below about 40 F. (4.4° C.)) concentrated orange juice (Conc. Juice) . . . , orange juice aroma flavor volatiles (Aroma/Flavor Concentrate), plus other orange juice materials such as pulp and peel oils . . . .

*Id.* at col. 8, ln. 19, to col. 9, ln. 57 (emphasis added); *see also id.* at col. 4, lns. 7-11 (premix solution of solubilized calcium includes “an acid component comprising” citric acid and malic acid); *id.* at col. 9, ln. 65, to col. 10, ln. 3 (premix solution containing a “mixture of citric and malic acid”).

As described, the FIGURE shows such “Acids” being used to form an acid solution, which is eventually added to the concentrated juice, aroma/flavor concentrate, pulp, and oils in a mix tank to make the juice product.